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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,873	11/04/2003	Masahiro Hatakeyama	2003-1606	5137
513	7590	12/28/2005	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			ROSASCO, STEPHEN D	
		ART UNIT	PAPER NUMBER	
			1756	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/699,873	HATAKEYAMA ET AL.
	Examiner Stephen Rosasco	Art Unit 1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 November 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 6,10-15 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 6,10-15 and 29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 November 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/04/03

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**Detailed Action**

Applicant's election without traverse of Group I (claims 6, 10-15 and 29) in the reply filed on 10/18/05 is acknowledged.

The disclosure is objected to because of the following informalities: there are numerous spelling and grammatical errors present, e.g., page 2, line 3, "distance of a light source", line 5, "within a subwavelength", line 8, "structures of the structure"; page 4, line 15, "enables to produce"; page 58, lines 1-2, "section of container";

Amend the first sentence of the specification to update the status of the parent application to include that it is now U.S Patent No. 6,671,034.

Appropriate correction is required.

Claims 12 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The use of the term fast atomic beam is not described in the specification in such a way that one could use it. What atoms can be used?

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 6 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin (5,928,815).

Martin teaches the claimed invention (see claims, esp: claim 14).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 10-15 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (5,928,815).

The claimed invention is directed to a method for evanescent-field-assisted imprinting, comprising: placing a proximity field exposure pattern on a section of container in which light is enclosed; aligning a fabrication object having a photo-sensitive film thereon in proximity of said proximity field exposure pattern; and injecting a light from said container into said proximity field exposure pattern so as to imprint said proximity field exposure pattern on said photo-sensitive material by means of an evanescent field formed between said proximity field exposure pattern and said photo-sensitive film.

The applicant states that the method requires that the incident beam be aligned with the inclination angle of a prism, and the optical system is necessarily complex. Also the exposure pattern section can only accept a small exposure area. And, because the incident light is at an angle to the proximity field exposure pattern, the depth of imprinting is shallow, and because the exposed area increases quickly along the beam line, it is difficult to expose a structure having high aspect ratios on the photo-resist film.

Martin teaches a near-field optical lithographic mask device for for imaging a desired pattern of light onto a photoresist layer, said mask device comprising:

- a) a mask block having a mask end and an illumination end, said illumination end having a flat exterior surface, and
- b) a positioning mechanism capable of precisely maintaining said mask in a predetermined vertical position and a predetermined horizontal orientation with respect to said photoresist layer,

and wherein said mask block is approximately cylindrical in shape and made of a material having a high index of refraction and is transparent to ultraviolet light to be used in said imaging and wherein said mask end has imprinted thereon a pattern of ridges and troughs, said ridges replicating said desired pattern, wherein a thin metal film is placed on said mask end, said thin metal film covering all ridges and troughs, wherein said troughs are filled with a light-absorbing material, and wherein said mask block has a metal cladding covering all outside surfaces except for said mask end and said flat exterior surface of said illumination end, wherein said metal cladding is sufficiently thick to reflect all ultraviolet light being transmitted through said mask block.

And wherein said illumination system shines ultraviolet light onto said illumination end of said mask block after said ultraviolet light has passed through a optical-thermal filter.

The teachings of Martin differ from those of the applicant in that the applicant teaches the use of multiple layers on the base substrate. However, the use of multiple layers is known in the art of photolithography and it would have been obvious to one having ordinary skill in the art to take the teachings of Martin and use them with a substrate having multiple layers in order to make the claimed invention because the technique is used to pattern the outermost layer and so the number of layers employed is a function of the specific application required.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Rosasco  
Primary Examiner  
Art Unit 1756

S.Rosasco  
12/21/05